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patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

Published:

— with international search report

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AN AIRPORT ADVERTISING SYSTEM

FIELD OF THE INVENTION

The present invention relates to airports and, in particular, to a system of displaying advertising
5 to aircraft passengers during take-off and/or landing of the aircraft from the airport.

BACKGROUND ART

Airports are by definition dividend into two zones, namely the "airside" and the "landside".
The airside is the area from which members of the public are excluded and includes the
runways, taxiing areas and apron. The "landside" is the remainder of the airport to which the
10 general public is permitted free access and egress. This includes the terminals, car parks, taxi
rank, etc.

It is well known that aircraft passengers represent a lucrative market and the provision of
advertising to aircraft passengers in aircraft terminals is a well established business which
enjoys a large turnover. Normally such display advertising takes the form of large vertical
15 billboards positioned on the walls of the interior of the airport terminal. However, this
advertising is restricted to the landside. As a consequence, this advertising is only able to be
seen by the aircraft passengers prior to embarkation and after disembarkation and is unable to
be seen during flight.

OBJECT OF THE INVENTION

20 The object of the present invention is to extend the availability of advertising to enable
advertising to be displayed to aircraft passengers during take-off and/or landing and/or taxiing
and thereby create a new advertising market. In particular, the invention enables advertising to
be displayed at locations in the airside.

SUMMARY OF THE INVENTION

25 In accordance with a first aspect of the present invention there is disclosed a substantially
horizontal billboard being substantially flush with a ground surface and being dimensioned to

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be visible to aircraft passengers during take-off and/or landing and/or taxiing of the aircraft. Preferably the billboard is located within the airside.

In accordance with a second aspect of the present invention there is disclosed a method of displaying advertising to aircraft passengers within an aircraft whilst in flight or taxiing within an airport airside, said method comprising the step of locating a substantially horizontal billboard at a location within the airside, said billboard being substantially flush with a ground surface and being dimensioned to be visible to aircraft passengers during take-off and/or landing and/or taxiing of the aircraft. The preferred location is alongside an airport runway at a distal end of said runway beyond a touch-down/lift-off zone of the runway.

10 BRIEF DESCRIPTION OF THE DRAWINGS

Several embodiments of the present invention will now be described with reference to the drawings in which:

Fig. 1 is a plan view of Sydney's Kingsford-Smith Airport showing the locations of the three runways,

15 Fig. 2 is a transverse vertical cross-section through a horizontal billboard in accordance with one embodiment of the present invention,

Fig. 3 is a perspective view of a horizontal billboard in accordance with another embodiment of the present invention, and

20 Fig. 4 is a view similar to Fig. 3 but showing a further embodiment of the present invention having a peripheral skirt.

DETAILED DESCRIPTION

As seen in Fig. 1, Sydney's Kingsford-Smith Airport 1 has two north-south runways 2, 3 and an east-west runway 4 within the airside. Each runway has a central zone intermediate two opposite distal ends. Intermediate the central portion and the distal ends is a take-off/touch-down zone 5 indicated by dotted lines in Fig. 1. That is to say, aircraft taking off approach the distal end of the runway and are airborne at or about the zone 5 whilst aircraft coming in to land approach the central zone of the runway and have landed by the time they reach the zone 5.

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In accordance with a first embodiment, positioned alongside each of the runways 2, 3, 4 and between the distal end of the runway and the adjacent zone 5 is a large, substantially horizontal billboard 7. In the embodiment illustrated in Fig.1 each of the three runways has four billboards 7 so there are twelve billboards 7 in total.

- 5 Each of the billboards 7 has a dimension of approximately fifty metres by fifty metres and is therefore approximately $\frac{1}{4}$ hectare in surface area. Such a size billboard is easily able to be seen by aircraft passengers immediately prior to landing or immediately after taking off.

- 10 In general the area alongside runways is grassed and must be generally free of obstructions in order that there not be a collision with an obstruction should the aircraft happen to leave the runway in an unintended direction. Most such grassed areas are regularly mowed, however, sometimes they are fenced off and grazed. In all cases the general public is denied access to the grassed areas. In order not to constitute an obstruction, the billboards 7 should preferably be both substantially horizontal and also be mounted close to the ground. In its simplest form, the billboard 7 could simply be formed from the grass alongside the runway and the indicium or
- 15 indicia which go to make up the advertising can simply be painted on to the grass or the grass be dyed. However, it is thought that this is generally unsatisfactory since the grassed areas alongside airport runways are generally not very smooth and substantial upkeep is required for such a site.

- 20 Therefore a second embodiment is to form the indicia on a low level prepared surface other than grass. Examples of such prepared surfaces include spray sealed rolled profiles, light construction asphalt, or concrete. The indicia are painted onto the prepared surface. Such prepared surfaces incur a capital cost but reduce the maintenance costs such as grass mowing.

- 25 A third, and more preferred embodiment is that illustrated in Fig. 2 where a billboard 17 is formed from a rigid sheet 16 which is anchored by bolts 15 into a cementitious pad 14 formed from concrete or asphalt. In this way the sheet 16 is able to be provided with bright colouring of a durable nature and therefore the upkeep of the billboard 17 is minimal.

It is apparent that the land surface in Fig. 2 is substantially level and therefore so to is the sheet 16. However, if the land surface slopes then so too will the sheet 16. Thus the sheet 16 may be regarded as being substantially flush with the land surface.

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In a still further embodiment as illustrated in Fig. 3, the billboard 27 is formed from a flexible sheet 26 which extends between two rollers 21 and 22 which are mounted in journals 23 which are in turn supported by a cementitious pad 24. A motor 25 enables the roller 21 to be rotated in either direction.

- 5 The flexible sheet 26 carries an advertising sign. If desired, the advertising sign can be back illuminated by means of elongate light fittings 29 positioned under the sheet 26 at spaced apart locations.

As indicated by dotted lines in Fig. 3, if desired the flexible sheet 26 can take the form of an endless loop 30 which enables two advertising signs to be alternatively displayed in a regular automated fashion. Alternatively, the flexible sheet 26 can consist of only a single sign in which case the sheet 26 is wrapped around each of the rollers 21, 22 only by a small number of turns or even a fraction of a turn. In a further possible arrangement, the flexible sheet 26 can be very long and can be rolled from one roller 21 to the other roller 22, and then reversed. Such an arrangement enables a long sequence of advertisements to be displayed in turn, and the sequence then reversed.

Fig. 4 illustrates a still further embodiment of a billboard 37 which is essentially the same as in Fig. 3 but is provided with a peripheral skirt which prevents wind entering under the tensioned flexible sheet which forms the display surface of the billboard 37.

The height of the billboards 17, 27, 37 above the ground is typically less than one metre so there are several orders of magnitude difference between the height of the billboard above the ground and the length of an edge of the billboard.

The foregoing describes only some embodiments of the present invention and modifications, obvious to those skilled in the art, can be made thereto without departing from the scope of the present invention. For example, the rigid sheet 16 can be formed from a number of individual flush and abutting smaller sheets. Furthermore, the sheet 16 can be mounted at an inclined angle, preferably falling towards the adjacent runway, in order to both enhance its visibility from the air and permit run-off of rainwater from the sheet 16. In some instances the airside can include sloping surfaces, or even man made hills, on which the billboard(s) can be located generally substantially flush with the sloping surface. Generally such slopes would have a

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slope angle of approximately 60° or less — being the slump angle of soil or the scree angle of weathered debris.

In addition to being located as indicated in Fig. 1, the billboards 7 can also be located adjacent taxiways (taxiing runways which inter-connect the airport terminal(s) with the take off and landing runways 2, 3, and 4). In this way passengers can see advertising whilst taxiing and, in particular, whilst delayed on taxiways waiting for the take off runway to be cleared for take off.

The term "comprising" has used herein is used in the inclusive sense of "including" or "having" and not in the exclusive sense of "consisting only of".

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CLAIMS

1. A substantially horizontal billboard being substantially flush with a ground surface and being dimensioned to be visible to aircraft passengers during take-off and/or landing and/or taxiing of the aircraft.
- 5 2. The billboard as defined in claim 1 and located within the airside of an airport.
3. The billboard as defined in claim 2 and located alongside the airport runway and adjacent a distal end of said runway beyond a touch-down/lift-off zone of said runway.
4. The billboard as defined in claim 2 and located adjacent a taxiway of the airport.
5. The billboard as defined in claim 3 or 4 and comprising at least one indicium formed on,
10 or adhered to, grass alongside said runway.
6. The billboard as defined in claim 5 wherein said indicium or indicia are formed by painting or dyeing said grass.
7. The billboard as defined in any one of claims 1-4 and comprising at least one indicium formed on, or adhered to, a prepared surface of said airside.
- 15 8. The billboard as defined in claim 7 wherein said prepared surface is selected from the group consisting of spray sealed rolled profiles, light construction asphalt and light construction concrete.
9. The billboard as defined in any one of claims 1-4 and comprising a layer of sheet material mounted closely adjacent the ground and anchoring means interconnecting said
20 sheet material and said ground to prevent said sheet material being dislodged from its mounted position.
10. The billboard as defined in claim 9 wherein said sheet material is directly anchored to said ground.
11. The billboard as defined in claim 9 wherein said sheet material is substantially rigid and is bolted to a pad of hardened cementitious material formed substantially flush with said
25 ground.
12. The billboard as defined in any one of claims 1-4 and comprising a pair of substantially parallel rollers, means to mount said rollers closely adjacent the ground, a pliant sheet

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extending around and between said rollers, and means to rotate at least one of said rollers and thereby tension said sheet.

13. The billboard as defined in claim 12 wherein said sheet extends in an endless loop between said rollers.
- 5 14. The billboard as defined in claims 12-13 and having a peripheral skirt which substantially excludes wind from beneath said pliant sheets.
15. The billboard as defined in any one of claims 12-14 and having lighting means positioned below said sheet.
- 10 16. A method of displaying advertising to aircraft passengers within an aircraft whilst in flight or taxiing within an airport airside, said method comprising the step of locating a substantially horizontal billboard at a location within the airside, said billboard being substantially flush with a ground surface and being dimensioned to be visible to aircraft passengers during take-off and/or landing and/or taxiing of the aircraft.
- 15 17. The method as defined in claim 16 wherein said location is alongside an airport runway adjacent a distal end of said runway beyond a touch-down/lift-off zone of said runway.
18. The method as claimed in claim 16 wherein said location is adjacent a taxiing route of said aircraft.
19. The method as defined in any one of claims 16-18 including the further step of repeatedly changing the advertising displayed.
- 20 20. The method as defined in any one of claims 16-19 including the further step of illuminating the billboard.

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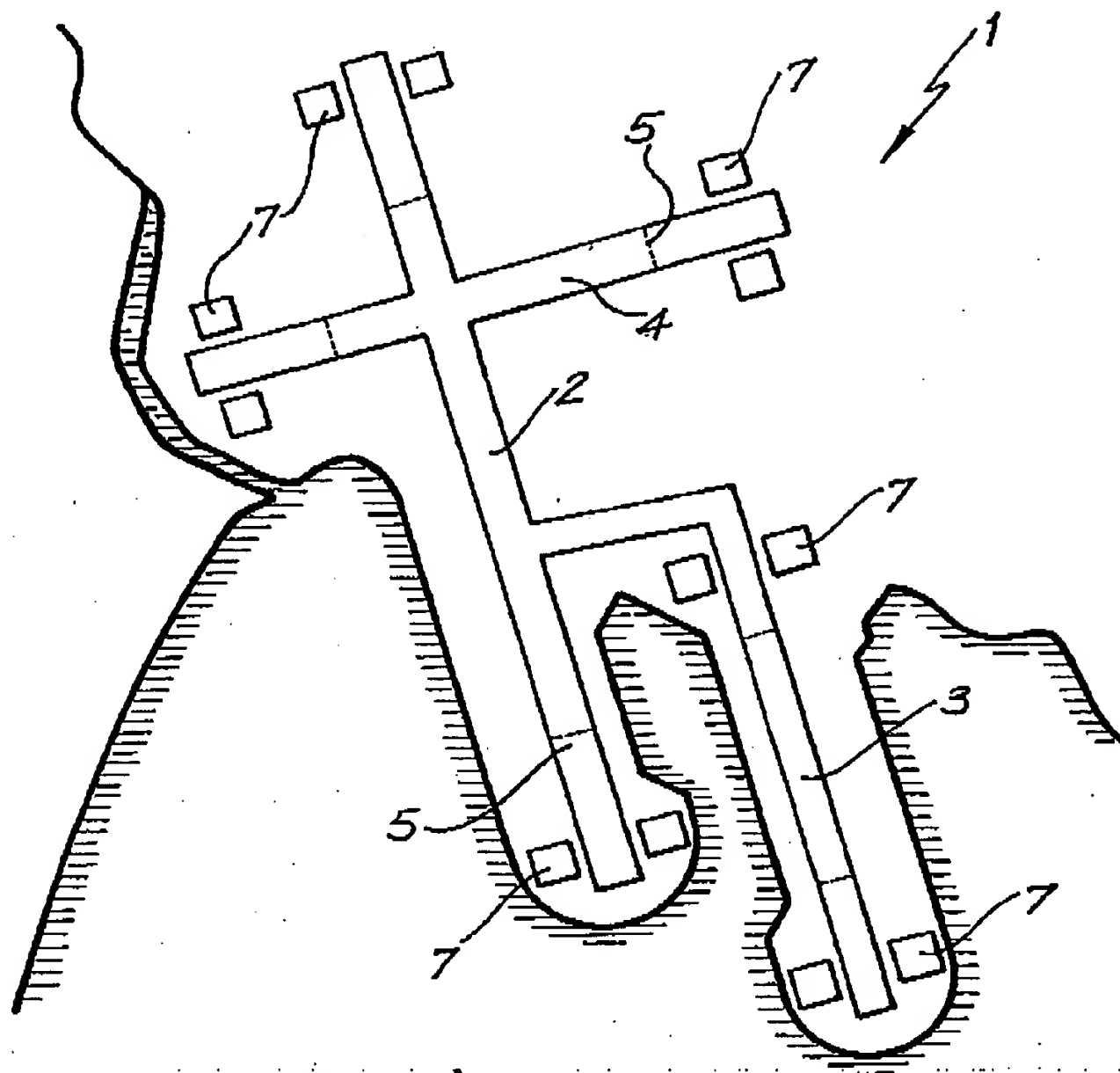


FIG. 1

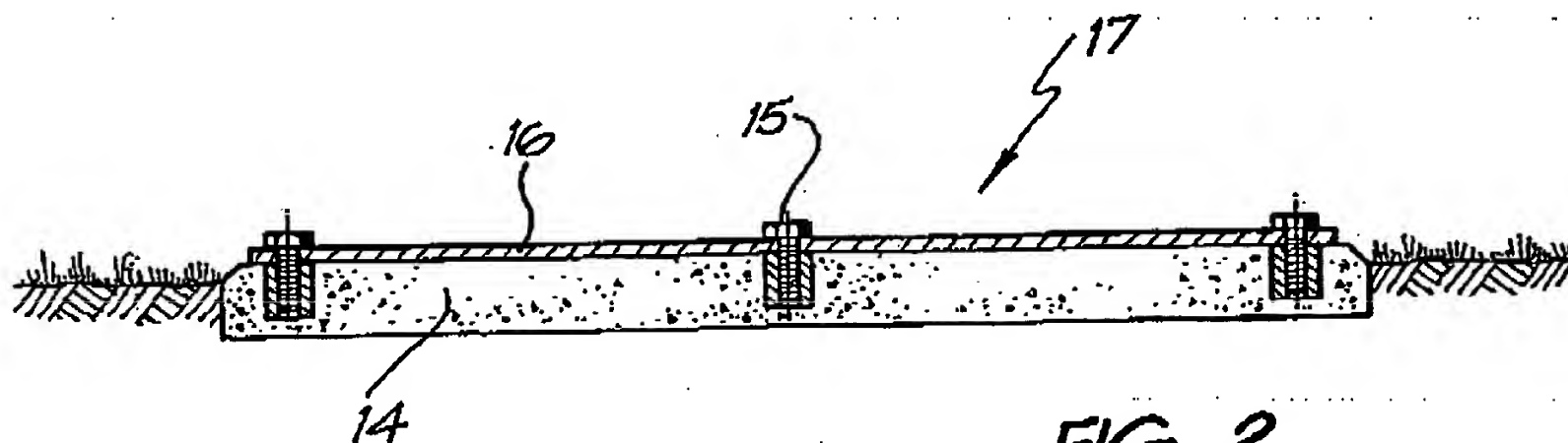
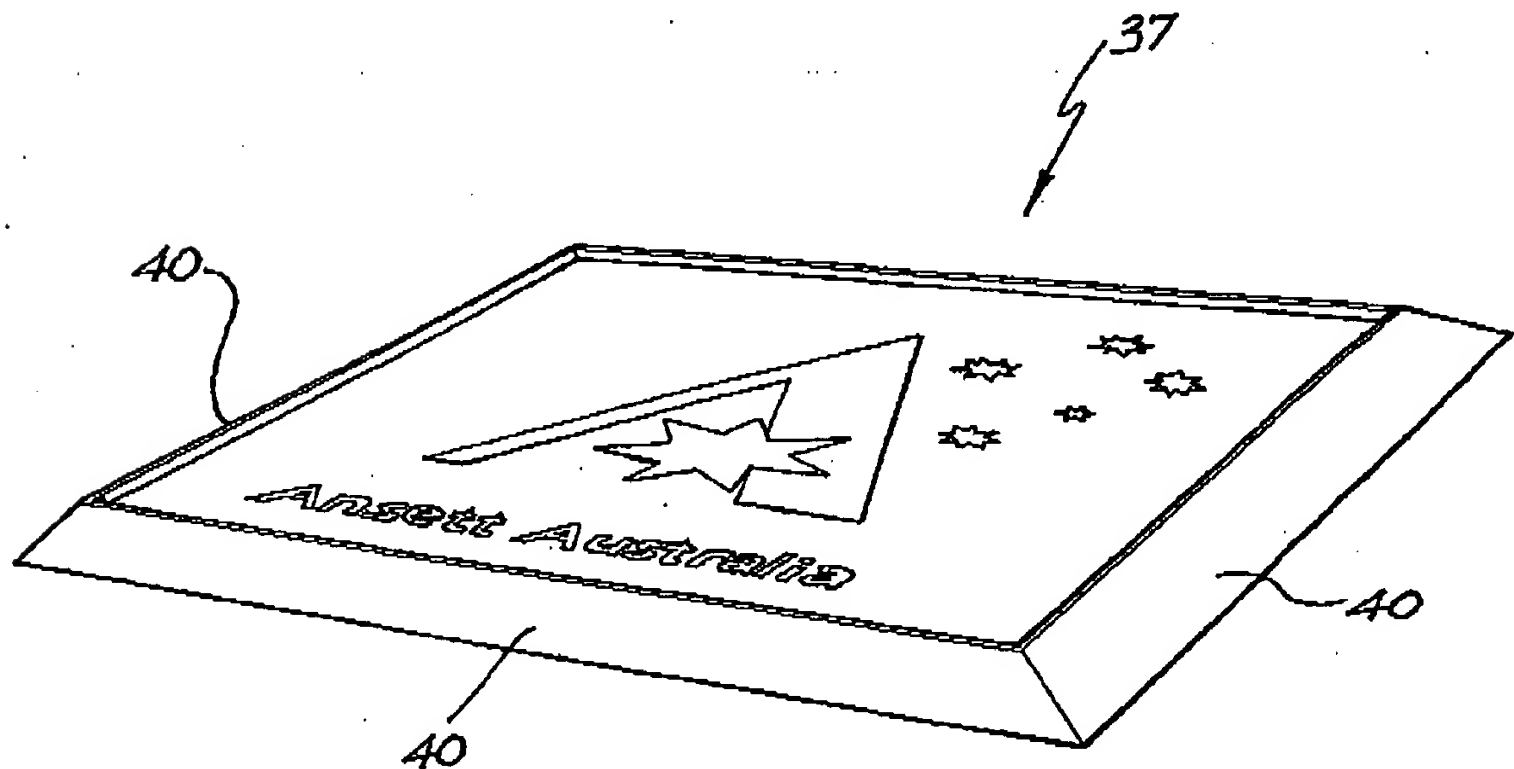
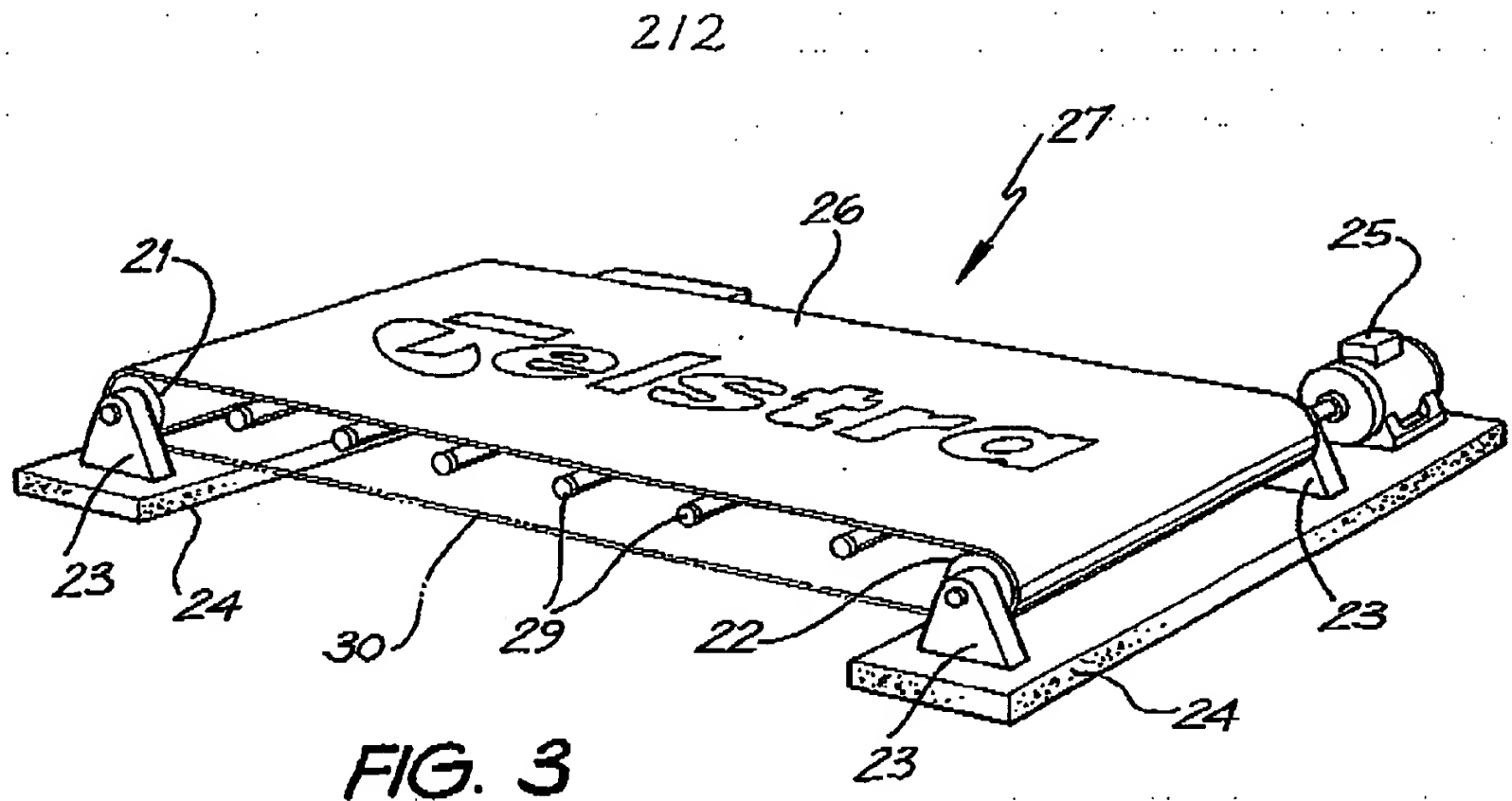


FIG. 2

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INTERNATIONAL SEARCH REPORT

International application No.
PCT/AU01/01015

A. CLASSIFICATION OF SUBJECT MATTER

Int Cl⁷: G09F 11/26, 19/02, 19/22

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)
DWPI: G09F and air + etc and advert + etc

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 5815966A (VSETEVICH) 6 October 1998 Figs	1-5,9-11,16-20
X	FR 2590060A (LAMARRE) 15 May 1987 Abstract	1-5,9-11,16-20
X	CH 689320A (LOKOSANA AG) 15 February 1999 Abstract	1-8, 16-20

☒ Further documents are listed in the
continuation of Box C

☒ See patent family annex

* Special categories of cited documents:

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"P" document published prior to the international filing date but later than the priority date claimed

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"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art
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Date of the actual completion of the international search
18 October 2001

Date of mailing of the international search report

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INTERNATIONAL SEARCH REPORT

International application No.
PCT/AU01/01015

C (Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT		
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	WO99/44840A (MINNESOTA MINING AND MANUFACTURING CO) 10 September 1999 Abstract	1-4,7,8,16-20
X	EP479697A (LEGENDRE) 8 April 1992 Abstract, Figs	1-4,7,9-11, 16-20
X	Derwent Abstract Accession No 99-308348/26 Class A93 G02 JP11106685A (NEMOTO TOKUSHU KAGAKU KK) 20 April 1999 Abstract	1-4,7,8,16-20
X	WO98/14930A (VONHOLM) 9 April 1998 Abstract	1-4, 12-20
X	AU 78686/87A (ALCORN) 31 March 1988 Claim 1	1-4, 12-20
X	US 4424449A (O'BRIEN) 3 January 1984 Column 2 lines 34-50	1-4, 16-20

INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No.
PCT/AU01/01015

This Annex lists the known "A" publication level patent family members relating to the patent documents cited in the above-mentioned international search report. The Australian Patent Office is in no way liable for these particulars which are merely given for the purpose of information.

Patent Document Cited in Search Report				Patent Family Member			
US	5815966	AU	59526/96	WO	9638832		
FR	2590060	NONE					
CH	689320	AT	887/95				
WO	9944840	AU	27961/99	BR	9908403	EP	1060088
		US	6180228				
EP	479697	FR	2667717	FR	2669457		
WO	9814930	AU	44034/97	EP	929888	HK	1021431
		NO	964179	PL	332548	SK	426/99
		US	6082525				
US	4424449	NONE					
AU	78686/87	NONE					
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